

### REMARKS

This document is submitted in response to the final office action dated June 1, 2007 ("Office Action").

Applicants have amended claim 14 to particularly and distinctively point out the subject matter that they deem as their invention. Support for this amendment appears in the specification at page 3, lines 24-26. This claim has also been amended to correct a typographic error. In addition, Applicants have added new claims 31-36, support for which can be found at page 5, line 30. No new matter has been introduced.

Upon entry of the present amendments, claims 14-16, 18-20, and 31-36 will be under examination. Applicants respectfully request that the Examiner reconsider this application in view of the following remarks.

#### Claim Objection

Claim 14 is objected to for including a typographic error. Applicants have corrected it.

#### 35 U.S.C. § 103 Rejections

Claims 14-16 and 18-20 are rejected as being obvious over Leach et al., in view of Iwano et al.<sup>1</sup>

Claim 14, as amended, covers a method for producing a fermentation product from starch-containing produce. This method includes treating a starch-containing slurry with a starch-hydrolyzing enzyme at an elevated temperature to coagulate protein.

Leach et al., the primary reference, discloses a method of converting granular starch to a soluble hydrolysate with alpha-amylase, a starch-hydrolyzing enzyme. It teaches that, to prevent gelatinization, this enzyme treatment takes place at "a temperature of from about 40 °C, preferably 50 °C, up to the actual gelatinization temperature of the starch." See column 17, lines 66-68, to column 18, lines 18-19.

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<sup>1</sup> The Examiner states in the Office Action that "[i]t appears that these claims "are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwano et al. (JP 10-248562) in view of Leach et al. (US 3,922,1[9]6)." See page 3, first paragraph. However, judging from his arguments in support of this rejection (see page 3, paragraphs 4-7, the Examiner clearly relies on Leach et al as the primary reference. Applicants therefore rebut this rejection accordingly.

The method of claim 14 requires an elevated temperature under which protein coagulates. It is well known in the art that heat-induced protein coagulation requires a high temperature, e.g., between 82-96 °C. See Mizukoshi et al., the Abstract of which is attached as Exhibit 1.<sup>2</sup> The temperature taught in Leach et al. (e.g., 40 °C), much lower than 82-96 °C, is not high enough for protein coagulation. Indeed, this reference teaches that “[t]emperatures above about 80 °C are generally avoided since gelatinization of the granular starch will occur, even in the presence of the soluble starch hydrolysate products.” See column 18, lines 26-29. In other words, it teaches away from “an elevated temperature to coagulate proteins,” as required by the method of amended claim 14.

As correctly pointed out by the Examiner, Iwano et al., the secondary reference, teaches “rice as a source of making wine (sake) by fermentation involving hydrolysis of rice.” See the Office Action, page 3, last paragraph. This reference does not cure the above-mentioned deficiency of Leach et al.

Taken together, neither Leach et al. nor Iwano et al. teaches “an elevated temperature to coagulate proteins,” a limitation recited in amended claim 14. In other words, these two references, taken alone or in combination, do not render this claim obvious. Nor do they render obvious claims 15, 16, and 18-20, all of which depend from claim 14, either directly or indirectly.

In view of the above remarks, Applicants respectfully request that the Examiner withdraw this rejection.

### CONCLUSION

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of

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<sup>2</sup> Applicants are only able to retrieve the abstract of this article, but not its full-text. As the Abstract (attached as Exhibit 1) teaches that “egg protein coagulated between 82 and 96 °C,” it is sufficient to support this statement.

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any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

No fee is believed to be due. Please apply any other charges to Deposit Account No. 50-4189, referencing Attorney Docket No. 70002-104001.

Respectfully submitted,

Date: 9/4/07

  
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## **EXHIBIT 1**

**Mizukoshi, M., T. Kawada, and N. Matsui.  
1979. Model studies of cake baking. I.  
Continuous observations of starch  
gelatinization and protein coagulation  
during baking. Cereal Chem. 56(4):305-309.**

**Abstract:** Model baking equipment is described for continuously observing starch gelatinization and protein coagulation in sponge cake batters during baking. Starch gelatinized between 79 and 88C and egg protein coagulated between 82 and 96C. Light transmission, viscosity, and microscopic changes took place at the same temperature and were interpreted as coinciding with starch gelatinization and protein coagulation.

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